Contribution ID: **302**   Type: **Poster**

Dark matter and flavor anomalies with vector-like fermions and scalar leptoquark

Friday 16 December 2022 14:00 (1 hour)

We make a comprehensive study of vector-like fermionic dark matter and flavor anomalies in a simple extension of standard model. The model is added with doublet vector-like fermions of quark and lepton types, and also a $S_1(\bar{\mathbf{3}}, \mathbf{1}, 1/3)$ scalar leptoquark. An additional lepton type singlet fermion is included, whose admixture with vector-like lepton doublet plays the role of dark matter and is examined in relic density and direct detection perspective. Electroweak precision observables are computed to put constraint on model parameter space. We constrain the new couplings from the branching ratios and angular observables associated with $b \to sll(\nu_l \bar{\nu}_l)$, $b \to s\gamma$ decays and also from the recent measurement on muon anomalous magnetic moment. We then estimate the branching ratios of the rare lepton flavor vioalting $B_{(s)}$ decay modes such as $B_{(s)} \to l_i^{\mp} l_j^{\pm}$, $B_{(s)} \to (K^{(*)}, \phi) l_i^{\mp} l_j^{\pm}$.

Session

Beyond the Standard Model

Authors: MOHANTA, Rukmani;   SINGIRALA, SHIVARAMAKRISHNA (University of Hyderabad);   SAHOO, Suchismita (University of Hyderabad)

Presenter: SINGIRALA, SHIVARAMAKRISHNA (University of Hyderabad)

Session Classification: Poster - 4